

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.-7. (canceled).

8. (currently amended): An apparatus for measuring a dimension of a sheet member, comprising:

a light source for applying light in a wavelength range which prevents the sheet member from being fogged;

a plurality of photodetectors, having respective optical axes directed toward a feed path of the sheet member, for directly or indirectly detecting said light from said light source; and

a data processor for detecting the position positions of an a first end and a second end of said sheet member based on a luminance of said light detected by said photodetectors, and measuring a dimension of said sheet member from the detected position positions of the end said first end and said second end of said sheet member,

wherein a portion of said light which is detected penetrates through said sheet member and another portion of said light which is detected passes by said end of said sheet member, such that image data is obtained which represents a combination of:

- a) a luminance level of light which has penetrated through a portion of said sheet member at said first end of said sheet member and which is detected by a first of said photodetectors; and
- b) a luminance level of light which has been received by said first of said photodetectors directly from said light source by passing by said first end; and

c) a luminance level of light which has penetrated through a portion of said sheet member at said second end of said sheet member opposite said first end and which is detected by a second of said photodetectors; and d) a luminance level of light which has been received by said second of said photodetectors directly from said light source by passing by said second end,

wherein a position of said first end of said sheet member is determined in relation to a position of said second end of said sheet member based on said combination of luminance levels.

9. (original): An apparatus according to claim 8, wherein said light applied by said light source is infrared light.

10. (currently amended): An apparatus according to claim 8, wherein said data processor comprises:

threshold setting means for setting a threshold depending on an optical property of said sheet member; and

end detecting means for detecting the position of the said first end and said second end of said sheet member based on said threshold and the luminance levels of said light.

11. (original): An apparatus according to claim 10, wherein said photodetectors are disposed in a position to detect said light that has passed through the feed path of said sheet member, said threshold setting means comprising means for setting said threshold depending on the transmittance of said light as said optical property of said sheet member.

12. (currently amended): An apparatus according to claim 10, wherein said data processor comprises:

dimension acquiring means for determining the dimension of said sheet member based on the position of said first end and said second end detected by said end detecting means;

skew detecting means for detecting a skew of said sheet member based on the position of said first end and said second end detected by said end detecting means; and

skew correcting means for correcting the dimension of said sheet member determined by said dimension acquiring means based on the skew detected by said skew detecting means.

13. (original): An apparatus according to claim 8, wherein said light source comprises an electronic flash lamp for applying said light to said sheet member as it is fed along said feed path, for a predetermined period of time.

14. (original): An apparatus according to claim 13, wherein said light source comprises infrared LEDs.

15. (original): An apparatus according to claim 9, wherein said sheet member comprises a photographic film, said infrared light having a wavelength of at least 900 nm.

16. (currently amended): An apparatus according to claim 10, wherein said photodetectors comprise CCD cameras for two-dimensionally detecting said light, said end detecting means comprising means for determining a rate of change of luminance along a predetermined direction from a distribution of luminance levels detected by said CCD cameras,

and comparing the rate of change with said threshold thereby to detect the position of the said first end and said second end of said sheet member.

17. (original): An apparatus according to claim 8, further comprising:

at least a pair of belt conveyors for feeding said sheet member while gripping the sheet member therebetween.

18. (withdrawn): An apparatus for marking a sheet member, comprising:

an exposure head; and

a control system connected to said exposure head for controlling said exposure head to mark a sheet member;

said exposure head having a light source comprising a plurality of white LEDs;

said control system comprising a controller and a driver;

said controller having a data storage unit for storing exposure time data, marking data, and current data for the sheet member;

said driver having an exposure time data controller, a marking data controller, and an LED driver for storing said exposure time data, said marking data, and said current data, respectively, supplied from said controller;

the arrangement being such that when said sheet member has reached a predetermined position, the exposure time data and the marking data are read from said exposure time data controller and said marking data controller, and said LED driver is energized to mark said sheet member.

19. (withdrawn): An apparatus according to claim 18, wherein said light source comprises a plurality of segments made up of linear arrays of said white LEDs, said segments being combined to substantially represent a shape of numeral "8".

20. (withdrawn): A method of marking a sheet member, comprising the steps of: determining and storing exposure time data, marking data, and current data for the sheet member;

determining a position to start marking the sheet member based on a detected signal which is generated when said sheet member has reached a predetermined position; and energizing white LEDs to mark said sheet member based on said exposure time data, said marking data, and said current data from the determined position.

21. (currently amended): An apparatus according to claim 8, wherein said first end and said second end of the sheet member ~~is-a~~are terminal ~~end~~ends in a longitudinal direction of the sheet member.

22. (currently amended): An apparatus according to claim 21, wherein ~~at least one of~~ said first of said plurality of photodetectors has a field of vision that overlaps ~~the one of said~~ terminal ~~end~~ends of the sheet member, and ~~another one of said~~ second of said plurality of photodetectors has a field of vision that overlaps ~~another end of the sheet member at a location distal to the terminal end~~ the other of said terminal ends.

23. (currently amended): An apparatus according to claim 8, wherein ~~at least two of said first and said second of said~~ plurality of photodetectors are offset from each other in a widthwise direction of the sheet member.

24.-26. (canceled).

27. (new): An apparatus according to claim 8, wherein said light source is wider than said sheet member.